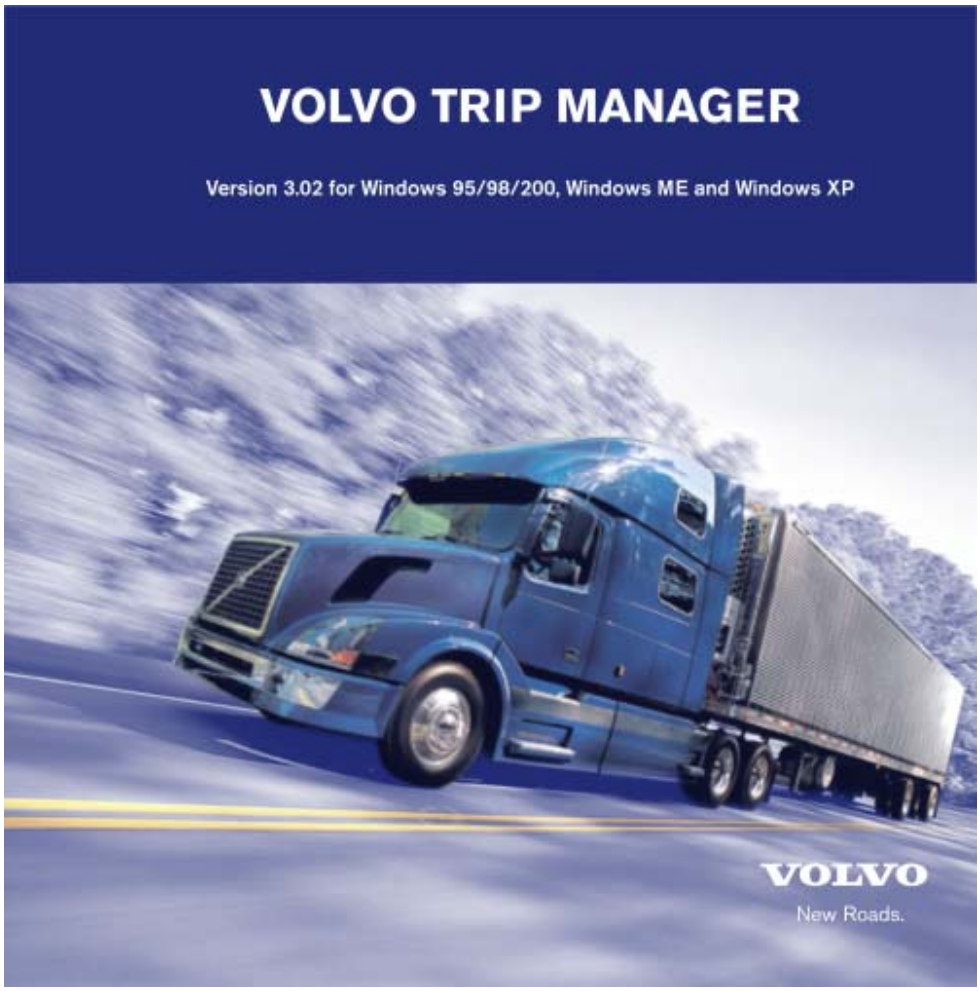

User's Manual

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Functional Overview

Welcome to Volvo Trip Manager

Volvo Trip Manager is a software program that can be used to monitor and manage vehicle data.

Fleets or other small trucking companies can benefit from using the Volvo Trip Manager software by managing certain vehicle events such as: Fuel consumption, PTO hours and Cruise control usage, just to name a few.

Information is downloaded to a PC directly from the Engine Electronic Control Unit (EECU) and stored in the database of the software program. The information then forms the basis for production of various reports. The user can view the data in several different ways: Trend Report, Trip Report, Total Report and Service Report.

Volvo Trip Manager is used in conjunction with a communication interface, connected to a serial COM port on the rear of the PC. The other end of the interface cable is connected to the vehicle's diagnostic connector. From this connector, the PC downloads information from the EECU via the datalink. The software is supplied on a CD and can be installed by starting the setup.exe program and following the on-screen instructions. Remember to restart the PC after installation of the software is complete.

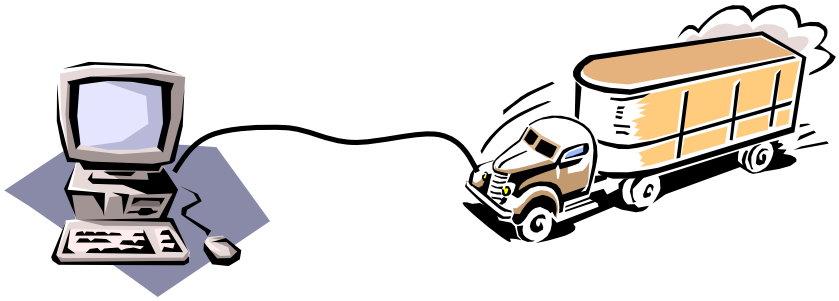
About the documentation

This user's manual describes the Volvo Trip Manager system. It contains the following sections:

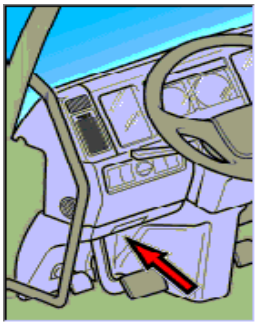
- **Functional Overview**- Explains briefly what can be done, from a conceptual point of view, without going into detail about how to do it. This section is intended for those who want to get acquainted with the possibilities offered by the system, before starting to use the actual software.
- **Reference Guide**- Can be used when working directly with the system and also when you need more details on how specific functions operate. This section also describes how to get started.

Information Downloading

Information is downloaded from the vehicle by connecting the communication interface to the diagnostic connector of the vehicle.



The location of the diagnostic connector is shown below:



A single download for a specific vehicle is called a **trip**.

There are two methods of downloading information from vehicles:

The menu option **Settings – Manual/Automatic downloading of vehicle data** is used to specify which method is to be used.

- **Manual Setting** – When the communication interface is connected to the vehicle, from the blank gray screen, select ”Vehicle” from the menu bar and select ”Download vehicle

data" from the drop-down menu to initiate the downloading of data.

- **Note**: In Manual downloading of vehicle data, a choice will be given as to whether to reset trip data or not. If the data should remain (un-reset), choose NO when the prompt is shown.
- **Automatic Setting** – The PC will continuously check whether a vehicle has been connected to the program via the serial port of the PC. When a connection has been established, the information downloading will start automatically.
- **Note**: In Automatic downloading of vehicle data, all tripdata will be reset automatically with no prompt or choice given.

It is possible to download vehicle data from different stations. Select "File" from the menu bar and choose **– Import data from file** or **Export Data**. These features work similar to conventional Windows- based file management transfers.

- **Export data -** the information from one PC can be exported to a file, which can then be transferred to another PC for review or data storage.

- **Import Data from file** – the information from another PC can be imported from a file and then displayed within another PC for review or storage.

Vehicle Groups

Vehicles can be organized into vehicle groups. The purpose of the grouping is to allow for a common follow-up of certain vehicle groups or types, i.e., Examining the fuel consumption of comparable vehicles. An example of the grouping could be similar to those below, but it is up to the user to create his/her own groups accordingly:

- ABC123 Trucking Co.
- Heavy vehicles w/ trailer
- Heavy vehicles w/o trailer
- Non-heavy vehicles

Warning Messages

The user of the software can set up certain parameters that will issue messages when it is time to perform different kinds of service. For each service type, limit values must be specified for fuel consumption, driving distance, calendar time or engine time. When the vehicle exceeds this value an indication will appear on the service report that it is time to perform a service.

- **Service Template** – (setup/edit) An initial setup is required for each specific vehicle for which a service reminder notice

is wanted. From ”Vehicle” in the menu bar, choose - **Vehicles and Vehicle groups - New or Edit - Service Settings**. See the Reference Section for more detailed information.

- **Service Template** - (view only), By choosing **Settings - Service Template**, the user can view all available service notifications per vehicle or vehicle groups and when they are due.This is a read only screen for information and cannot be altered.
-

As an aid, a service template of ordinary services to be performed to all vehicles can be defined. By doing this, multiple entry for each single vehicle will be avoided.

Service Settings can be edited according to the following:

- Description – Give the service to be performed a name of your choice.
- Unit - (time, distance, etc.) Set a unit to define the limit value that meets your needs for the type of service you are performing.
- Interval – Set an interval value that meets your needs for the type of service you are performing.
- Threshold value – A number of days/percentage of a unit before the service is due must be set in order to allow for an advance service due notice.
-

Reports

The types of reports, which are possible to produce, are summarized below. In the **Reference Guide** section you will find examples of report printouts and detailed explanations.

The reports are displayed on the screen, but can also be printed.

The reports can also be exported for further processing in other applications, such as Microsoft ® Excel or Access ® software programs.

Trend Report

The Trend report shows, for the selected vehicles, development with regard to a specific parameter, trip by trip, in bar graphs. The parameters available are:

- Driving distance
- Average speed
- Total fuel consumption

- Fuel consumption while driving
- Fuel consumption while standing still
- Time

Trip Report

The Trip report will, for the selected vehicle and the selected trip, show the information downloaded from the vehicle (trip = one download of vehicle information for a specific vehicle).

The following information is shown:

- Driving distance
- Driving time
- Total fuel consumption
- Average speed
- Fuel consumption while driving
- Fuel consumption while standing still
- Driving distance or time as a percentage distributed on the different parameters.

The information is shown both in a table with values and as bar graphs.

The information is also specified per each parameter. The parameters are:

- Total trip
- Driving
- Idle
- PTO
- More than 50 mph (80 km/h), this speed may be changed
- Cruise Control
- Top gear
- Economy
- More than 1600 rpm (this rpm may be changed)
-

Max values

In the older engine management system (Vectro II for D12B and D12C) there is a limitation of the stored Trip Fuel value to max 8134 gallons (30792 Liter). To avoid an error in the Trip Fuel calculation, a good habit is to read out the Trip data (and Reset Trip data) once every month. For correct calculated Trip Fuel the max Trip Distance should be less than 49.000 miles (= 78.000 km). This mileage is calculated for a truck with 6 mpg (= 39 L/100 km) truck.

Total Report

The total report shows totals of all captured events stored in the engine ECU, which can be downloaded into the Volvo Trip Manager software program. By selecting **Total Report**, the data can be displayed in either a graph or table-style format.

Service Report

The service report will show planned and performed services for selected vehicles and when they are due. An alert notice will also appear in the **Service Report**, for each instance when a particular service is due per vehicle.

Password

It is recommended that the password for the vehicle's instrument cluster is changed to avoid unintentional erasure of trip data. Changing the password will also protect the settings for "over-rev" and "overspeed".

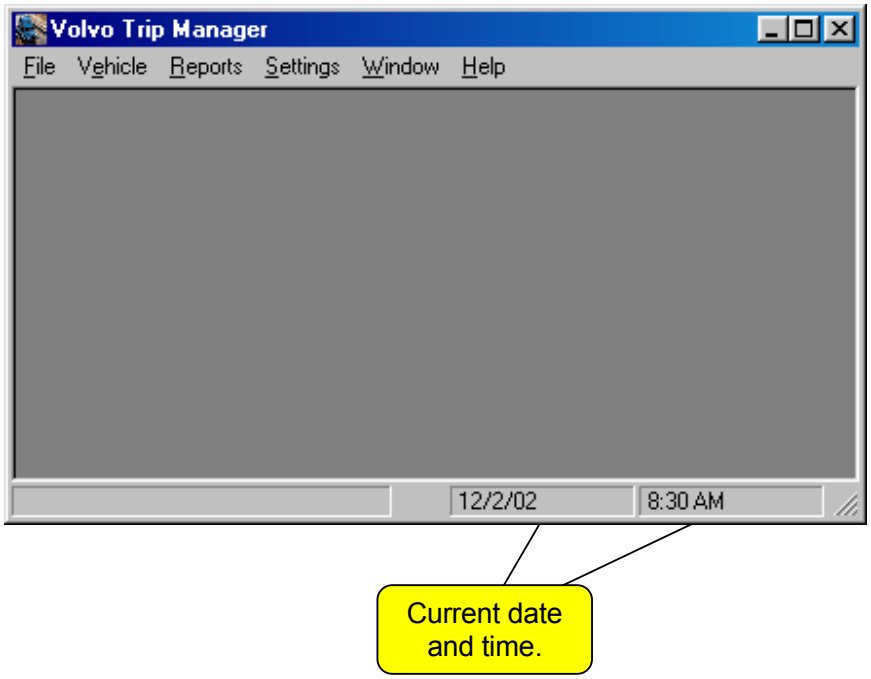
Please consult the vehicle owner's manual on how to change the password.

Reference Guide

Start Volvo Trip Manager

To start Volvo Trip Manager, click the Windows **Start** button and select **Programs - Volvo Trip Manager – Volvo Trip Manager**

The **Volvo Trip Manager** window will be displayed:



The Menu Bar

The menu bar of the **Volvo Trip Manager** window contains the following menus:

- File
- Vehicle
- Reports
- Settings
- Window
- Help

The contents of these menus are outlined in the following sections:

File – Import Data from File

With this selection, vehicle information can be imported from a file created by another Volvo Trip Manager system. The information is stored in the Volvo Trip Manager database. The current information will not be deleted.

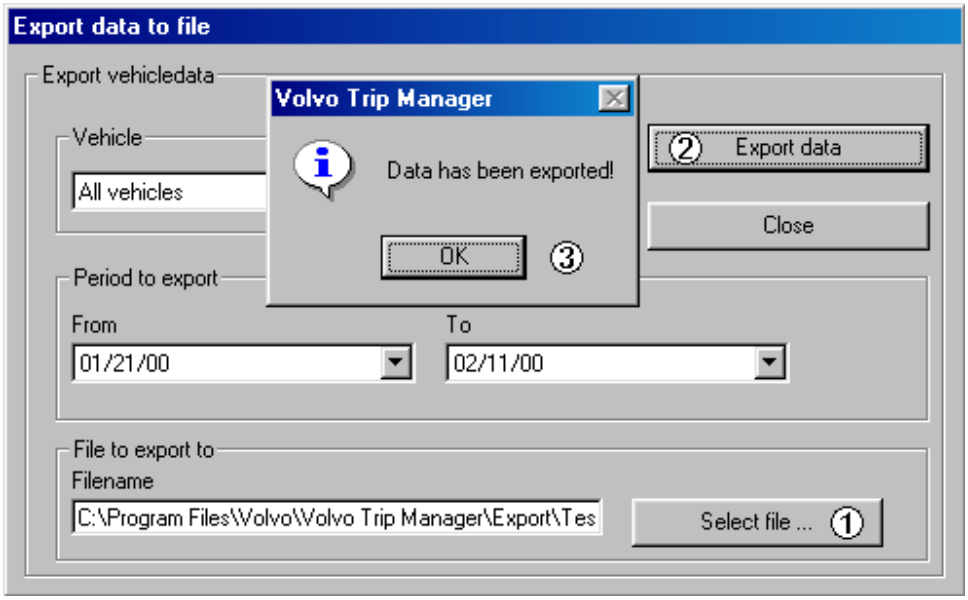
A standard file transfer window is displayed and is handled in the same way as a normal selection of file to folder manipulation. Select the requested file and click 'Open'. The file information will be retrieved.

File - Export Data to File

This selection allows information from the Volvo Trip Manager database to be imported into other Volvo Trip Manager installations. The entire database can be exported or only selected parts may be chosen. The file can also be exported in a comma-delimited format for use in other applications such as Microsoft ® Excel or Access ®.

When '**Export data to Trip Manager file'** or '**Export data to delimited file'** is selected, a corresponding **Export Data to File** window will be displayed:

Volvo Trip Manager File - Export

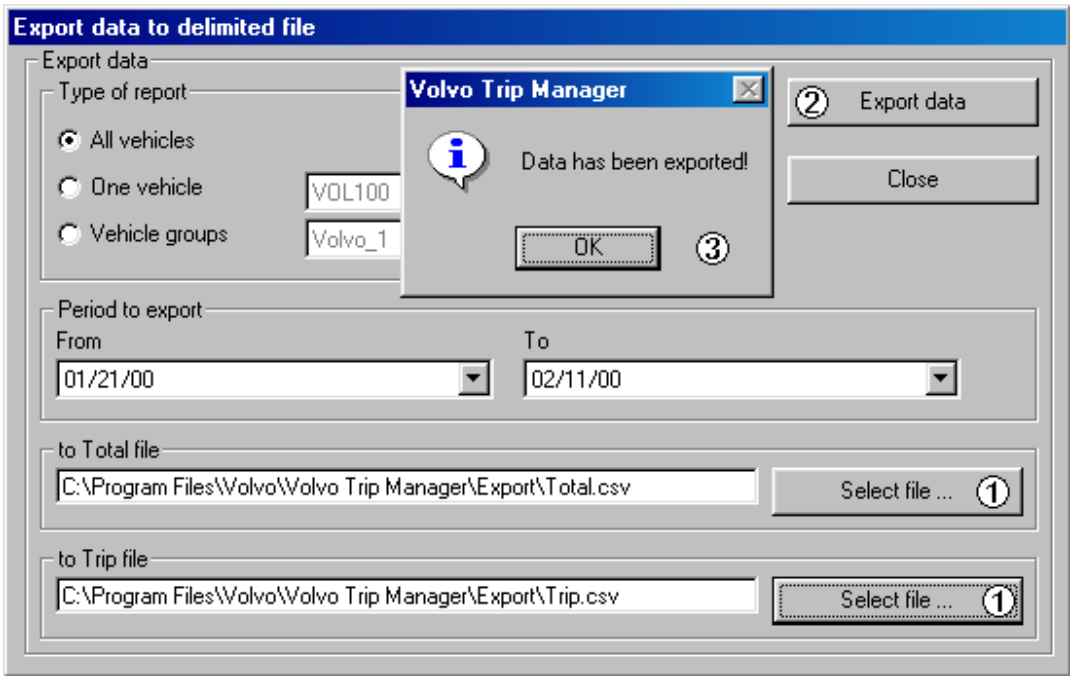


This window has a number of selection boxes. Specify selections according to the instructions below and click the 'Export data' button to create the file. This file can be transferred to another PC and opened in another Volvo Trip Manager installation.

1. Click ”Select File” to choose the file and export destination.
2. Click the button ”Export Data” to complete the export of data to file.
3. A prompt will appear to show that the export to file process is complete.

Note: To view or work with this file further, go to the location where the data was originally saved in selection (1) above.

Delimited File - Export



This window has a number of selection boxes. Specify selections according to the instructions below and click the ’Export data’ button to create the file. This type of file can be opened and transferred to Microsoft ® Excel or Access ® software applications.

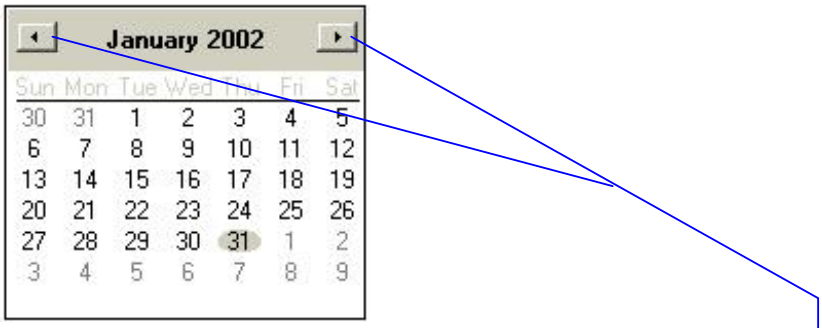
1. Click ”Select File” to choose the file and export destination. A complete ”Total file” or a single ”Trip file” can be selected at this time.
2. Next, click the button ”Export Data” to complete the export of data to file.
3. A prompt will appear to show that the export to file process is complete.

Note: To view or work with this file further, you go to the location where the data was originally saved in selection (1) above.

Field Descriptions

Vehicle: Select all or a specific vehicle in the drop down box.

Period to export: Select from- and to -date / time for the information to be exported. Click the drop down button to the right of the box to have a calendar window displayed:



Select a date by clicking on it. In the calendar you can scroll the months by using the side arrows.

Note: you can only scroll between months for which there is data from the vehicle(s) specified.

File to export to: If a new file is to be created - Type the name of the file.
To use an existing file - Click the 'Select file' button.

Select file Displays a window to select the folder and specify the export file.

Export data Starts export of the selected information to file.

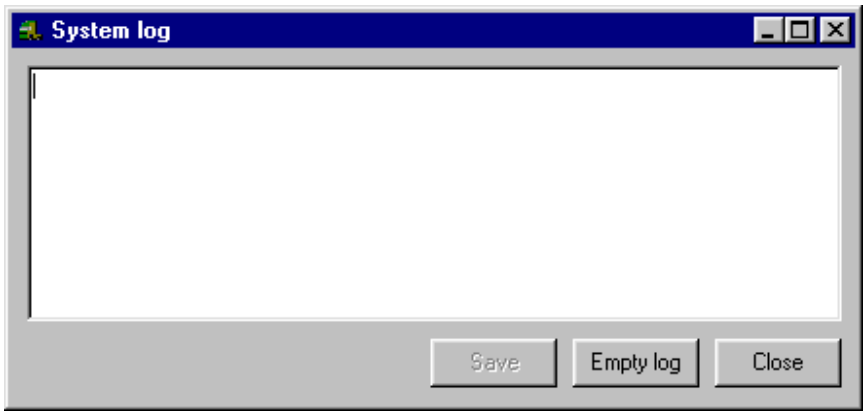
Close Closes the window.

File – Open System Log

Various messages issued by the system are stored in the system log. Each important event will be stored in this log for future reference. These events can be used as basis for fault tracing if a problem occurs in the application.

When downloading vehicle data, the times and vehicle names are logged. This is especially important when 'Automatic downloading of vehicle data' is active.

All messages will be displayed in the **System Log** window:



Field Descriptions

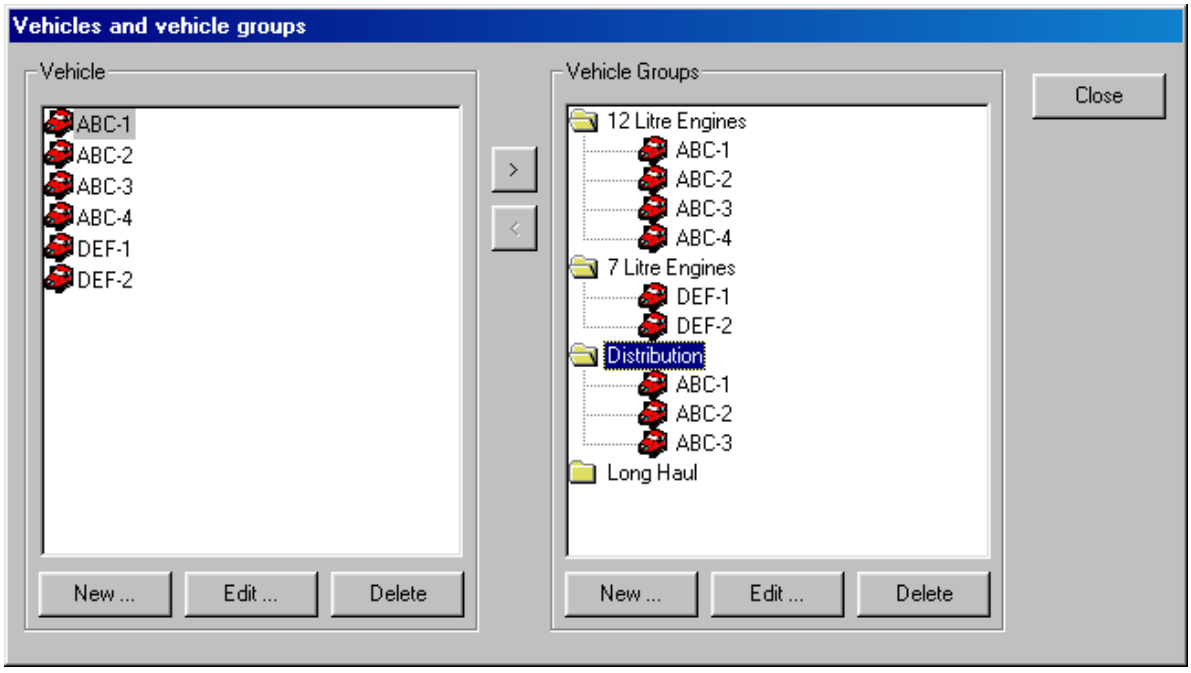
Empty log	Clears the window of all messages.
Close	Closes the window.

File - Close

By choosing, - **File -Close** – the user exits the Volvo Trip Manager program.

Vehicle – Vehicle and Vehicle Groups

With this selection, the **Vehicle and Vehicle Groups** window will be displayed. Here you can work with vehicle information and organize the -vehicles into vehicle groups.



The window shows all defined vehicles in the left box in alphabetical order without regard to vehicle groups. The right box contains the vehicle groups and related vehicles.

When a vehicle is downloaded for the first time, the system will record the chassis ID and engine ID, and the vehicle is registered with the name 'Guest vehicle'. The name can then be changed with the 'Edit' button.

You can:

- **Define a new vehicle** by clicking the left 'New' button. See New Vehicle section on the next page.
- **Change vehicle information** for the vehicle selected in the left box by clicking the left '**Edit**' button. The same window as with 'New' will be displayed with the existing information.
- **Delete a vehicle** and corresponding downloaded information by selecting the vehicle in the left box and clicking the left 'Delete' button. You will have to confirm the deletion by clicking 'Yes', or cancel with 'No'.
- **Expand** a vehicle group to view the associated vehicles by double-clicking the group in the right box.

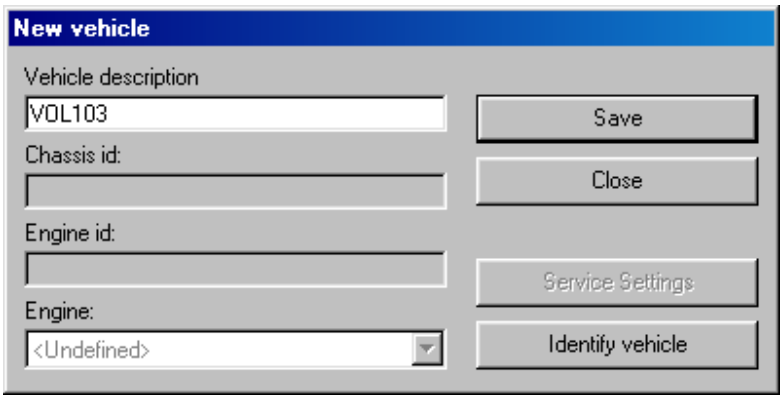
- **Create a new vehicle group** by clicking the right 'New' button. See New Vehicle section below.
- **Change the name of a vehicle group** by selecting the group in the right box and then clicking the right 'Edit' button. The same window as with 'New' will be displayed.
- **Delete a vehicle group** by selecting the group in the right box and click on the right 'Delete' button.
- **Remove a vehicle from a vehicle group** by selecting the vehicle in the *right* box and then clicking the < button.
- **Move a vehicle to a vehicle group** by selecting the requested group in the right box, selecting the vehicle in the left box and then clicking the > button.

  You can select several vehicles by holding down the Ctrl key while clicking on each. You can also select a range of vehicles by clicking the first and then holding down the Shift key and clicking the last one. All vehicles in between will also be selected.

  You cannot move vehicles between different vehicle groups directly in the right box. If a vehicle has been moved to the wrong group, you must first remove it from that group and then add it to the correct group.

New Vehicle

To define a new vehicle, click the left 'New' button in the **Vehicle and Vehicle Groups** window. The **New Vehicle** window will be displayed:



Fill in the vehicle description. The remaining information (chassis ID and engine ID) will be automatically retrieved at vehicle identification (see the description of the 'Identify vehicle' button on the next page).

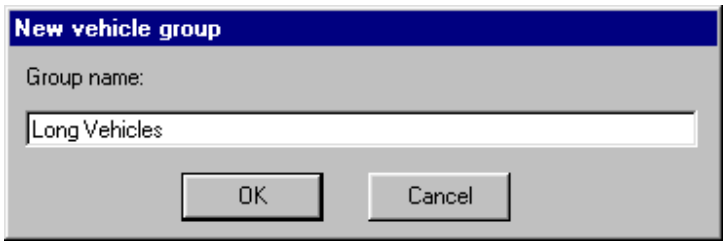
Then click 'Save' to save.

Field Descriptions

Vehicle description:	Used as identification of the vehicle in reports.
Chassis ID:	Cannot be changed. This information is downloaded at vehicle identification (see below).
Engine ID:	Cannot be changed. This information is downloaded at vehicle identification (see below).
Engine:	Engine type can be selected from the drop down box. It is necessary to select engine type only if torque data is downloaded from the vehicle. Information about the engine type is used by the system to draw the correct torque curve and to draw the vertical lines showing the limits for the ”green field” on the trip report.
Save	Saves the changes made in this window.
Close	Closes the window.
Service Settings	Opens the Service Settings window, where service intervals for the vehicle can be specified (see below).
Identify vehicle	Retrieves chassis ID and engine ID from the vehicle connected to the PC. There are two ways of doing this: 1 First define the vehicle with vehicle description (the ’New’ button). This can be made in advance for several vehicles. Then connect the vehicle to be identified to the PC, select the vehicle in the system with the ’Edit’ button and click ’Identify vehicle’. 2 When defining the vehicle with the ’New’ button, after having specified vehicle description and connected the vehicle to the PC, click ’Identify vehicle’.

New Vehicle Group

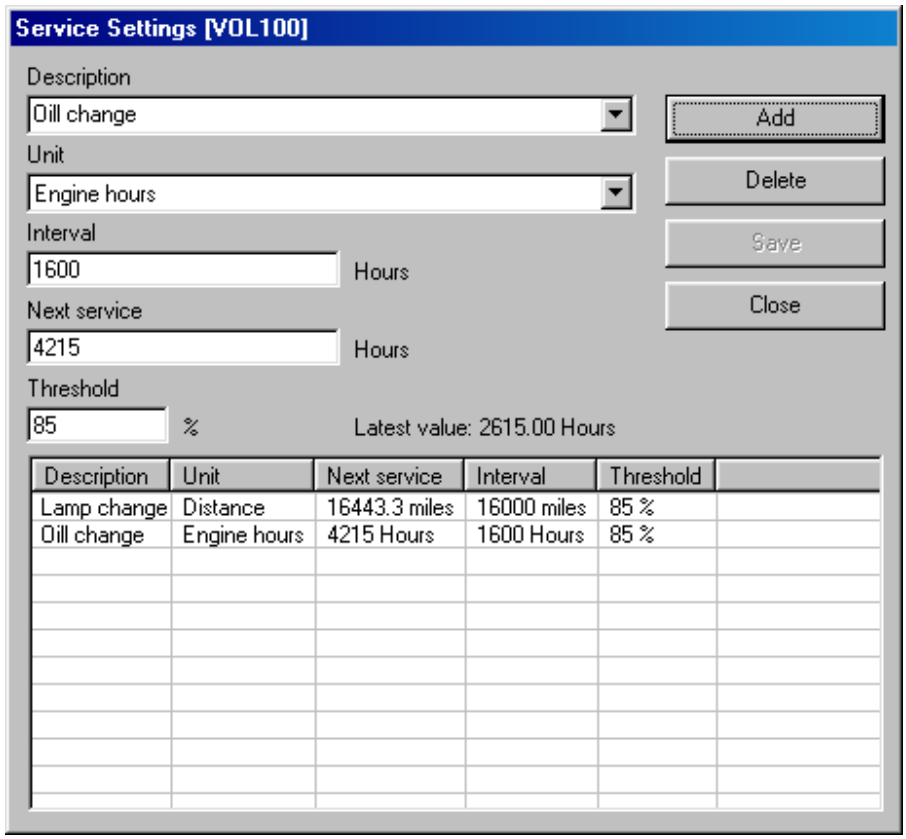
To define a new vehicle group, click the right ‘New’ button. The **New Vehicle Group** window will be displayed:



Type the name of the vehicle group and click ‘OK’ to save, or ‘Cancel’ to cancel.

Service Settings

When the 'Service report' button in the **New Vehicle** window is clicked, the **Service Settings** window will be displayed. Here, service intervals for the vehicle can be specified:



You can:

- Add a new service. In the upper part of the window, information for that service is specified. Click 'Add' to add it to the list in the lower part of the window.
- Delete a service by selecting the service in the list at the lower part of the window and clicking 'Delete'.
- Change the information of a service. Click the requested service in the lower part of the window. Corresponding information will then be displayed in the boxes in the upper window. Change the information and click 'Save'.

Field Descriptions

Description: Select a service from the list, or type a new service. The services available are defined in the menu option, **Settings – Service template.**

Unit: There are four units available: calendar time, engine hours, distance and consumed fuel. The information in columns 'Next service' and 'Interval' in the chart will be given in this unit.

Interval: The service interval.

Next service: Specify when the next service is to be performed. If the vehicle exceeds this value, a warning will be given on the service report. The latest value downloaded from the vehicle will also be shown in the middle of the window.

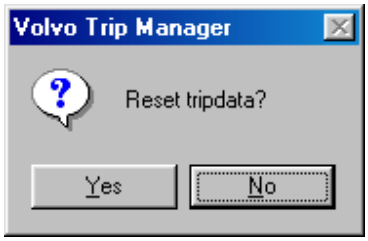
Threshold: This percentage defines when an alert is to be shown in the service report. If for instance the next service is to be performed at 15,000 miles and the threshold value is set at 90%, the threshold limit will be 13,500 miles. If the vehicle exceeds this value, an alert will be issued.

Vehicle – Download Vehicle Data

With this selection, vehicle information is downloaded from the connected vehicle, provided that 'manual downloading' is active. Connect the vehicle to the PC before selecting the menu option. The vehicle data will be downloaded.

Note: The F5 key is a shortcut to this function.

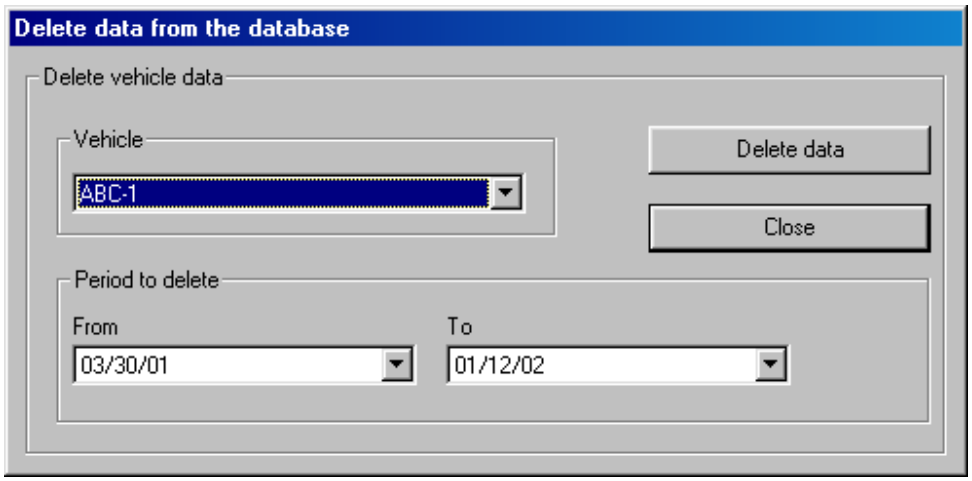
After the data has been downloaded to the Volvo Trip Manager program, a prompt will appear asking if the data should be reset or not ("Yes" or "No"). If the data should remain for other users, select "No". Otherwise, by choosing "Yes", the vehicle data will be reset to zero.



Note that the reports will be calculated using the latest "reset" as a reference. So, for the best results, always reset the data when downloading.

Vehicle – Delete Vehicle Data

With this selection, vehicle data can be deleted for all or certain vehicles. It is important to note that once data has been deleted for a vehicle, no more reports can be made for that vehicle.



The **Delete Data from Database** window will be displayed:

Make selections according to the descriptions below and click the 'Delete data' button to have the information deleted. Confirm the deletion with 'Yes', or cancel with 'No'.

Field Descriptions

Vehicle: Select a specific vehicle or choose all vehicles in the drop down box.

Period to delete: Select from- and to- dates for the information to be deleted.

Click the button to the right of the box for a calendar window:

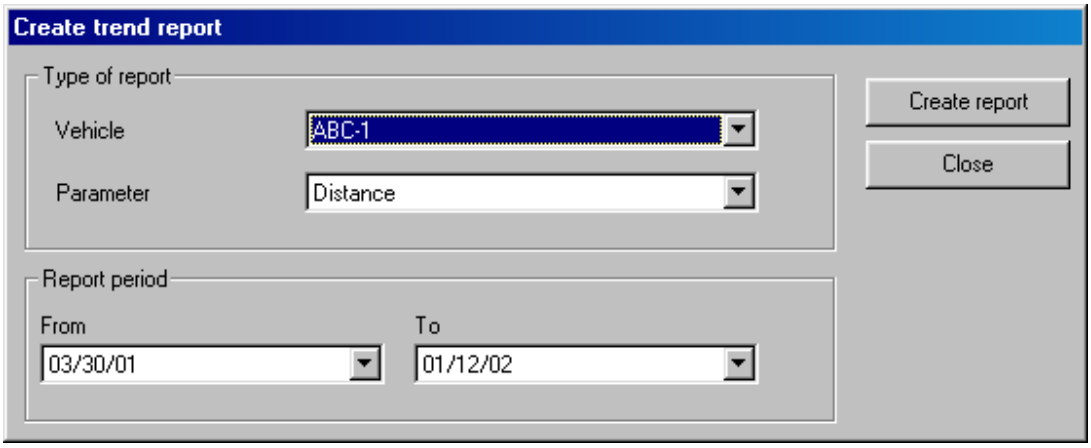
Select a date by clicking on it. In the calendar, the months can be scrolled by using the side arrows.

Delete data Starts the deletion of the specified information.

Close Closes the window.

Reports – Trend Report

When selecting this report, the **Create Trend Report** window will be displayed, where a number of selections can be specified:



The window contains a number of possible selections (see the field descriptions below). Make selections according to the descriptions below and click the 'Create report' button to display the report.

Field Descriptions

Vehicle: Select the requested vehicle in the drop down box.

Parameter: Specify the parameter to be reflected in the report.

Report period: Specify the requested time interval by selecting from the calendar. The calendar is displayed by clicking the arrow to the right in the box. The calendar also contains side scrolling arrows, with which the month can be selected.

It is only possible to select periods for which there is data. It is not possible to select other periods in the boxes.

Create report Creates the report on the screen.

Close Closes the window.

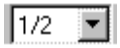
The Report Window

When the 'Create report' button is pressed in the **Create Trend Report** window, the **Preview** window will be displayed with the report and the following toolbar at the top of the window:

The buttons of the toolbar are described below. An example of the report is shown on the next page.

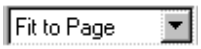
Brings back the report selection window.

Prints the report.

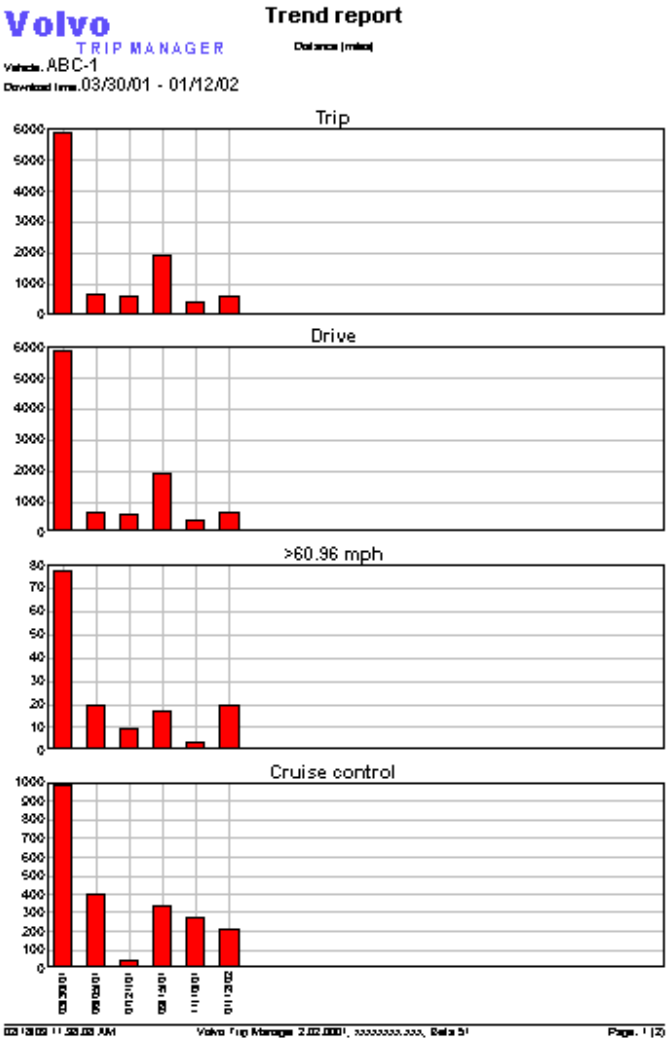


Allows selection of the first two, or all graphs to be shown.

Allows selection of a specific enlargement of the graph.



The maximum of the axis will automatically be calculated for each parameter, i.e. for each line of bars. However, if this box is selected, the scaling will be kept the same for all lines of bars.



When the report is displayed, you can:

- View the exact value on which a bar is based, by pointing with the mouse on the bar and holding it there. After a short delay, a call out will appear displaying the value.
- Create more reports from the Reports menu to make several reports simultaneously available on the screen.
- Select or deselect horizontal / vertical grids between the cells of the table by right clicking on the report and selecting the corresponding option from the displayed menu.

Information that will not be displayed

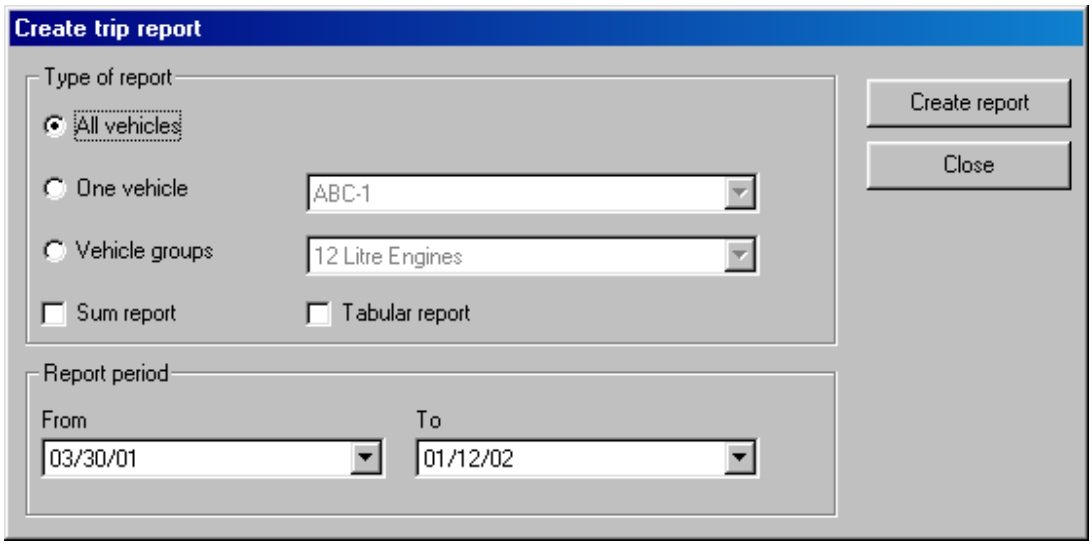
- If the Trend Report includes downloads with different settings for overspeed or over-rev, the report will not show the speed or rev selected by the customer as a header over the speed or rev graph. Instead the headers “> Customer Vspd” or “>

Customer Espd" will be shown. The image on the previous page shows an example of this. If all downloads selected for the Trend Report have the same speed or rev limit, the actual speed or rev value will be shown as a header.

- If the Trend Report includes downloads that don't have enough time logged for some of the necessary calculations the report will not show any values at all for these parameters. In this case, only shaded bars will be displayed. For example, one hour of logged idle time is necessary for calculation (and display) of average fuel consumption - time (gallons/hour). See the comment on "Time resolution" in the chapter dealing with the Limited Report.

Reports – Trip Report

When selecting this report, the **Create Trip Report** window will be displayed, where a number of selections can be specified:



This window contains a number of selections to be made (see the field descriptions below). Make selections according to the descriptions below and click the 'Create report' button to display the report.

Field Descriptions

All vehicles: To have the report to include all vehicles in the database, this option box should be selected.

One vehicle: To create the report for a specific vehicle, click this option box then select the vehicle from the drop down box.

Vehicle group: To have the report for all vehicles of a specific vehicle group, click this option box. Select the vehicle group in the drop down box.

Sum report: If this box is selected, all trips accumulated for the selected vehicles will be included.

Tabular report: If this box is selected, all trips associated with the selected vehicle or group of vehicles will be displayed in a table format. If left unselected, the information will be displayed in the usual graph format.

Report period: Specify the requested time interval by selecting from the calendar. A calendar window is displayed by clicking the arrow to the right in the box. The calendar also contains side scrolling arrows, with which the months can be selected.

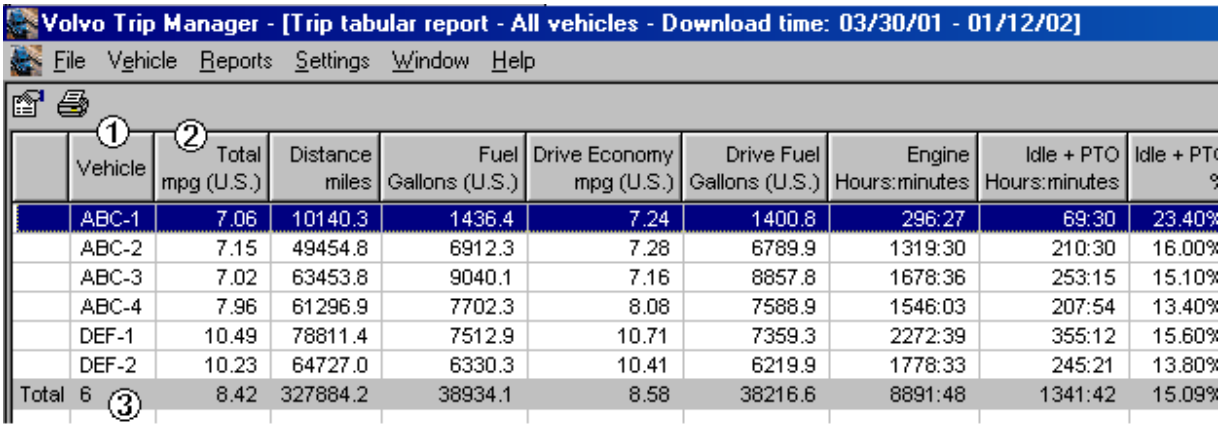
Only periods for which there is data can be selected. It is not possible to select other periods in the boxes.

Create report Creates the report on the screen.

Close Closes the window.

For details about the buttons of the report window and other options, see the 'Report Window' section under 'Trend Report'.

Trip Tabular Report


Volvo Trip Manager - [Trip tabular report - All vehicles - Download time: 03/30/01 - 01/12/02]
File Vehicle Reports Settings Window Help
1
2
3

	Vehicle	Total mpg (U.S.)	Distance miles	Fuel Gallons (U.S.)	Drive Economy mpg (U.S.)	Drive Fuel Gallons (U.S.)	Engine Hours:minutes	Idle + PTO Hours:minutes	Idle + PT %
	ABC-1	7.06	10140.3	1436.4	7.24	1400.8	296:27	69:30	23.40%
	ABC-2	7.15	49454.8	6912.3	7.28	6789.9	1319:30	210:30	16.00%
	ABC-3	7.02	63453.8	9040.1	7.16	8857.8	1678:36	253:15	15.10%
	ABC-4	7.96	61296.9	7702.3	8.08	7588.9	1546:03	207:54	13.40%
	DEF-1	10.49	78811.4	7512.9	10.71	7359.3	2272:39	355:12	15.60%
	DEF-2	10.23	64727.0	6330.3	10.41	6219.9	1778:33	245:21	13.80%
Total	6	8.42	327884.2	38934.1	8.58	38216.6	8891:48	1341:42	15.09%

1. Vehicles will appear in the table as they were first entered into the database.

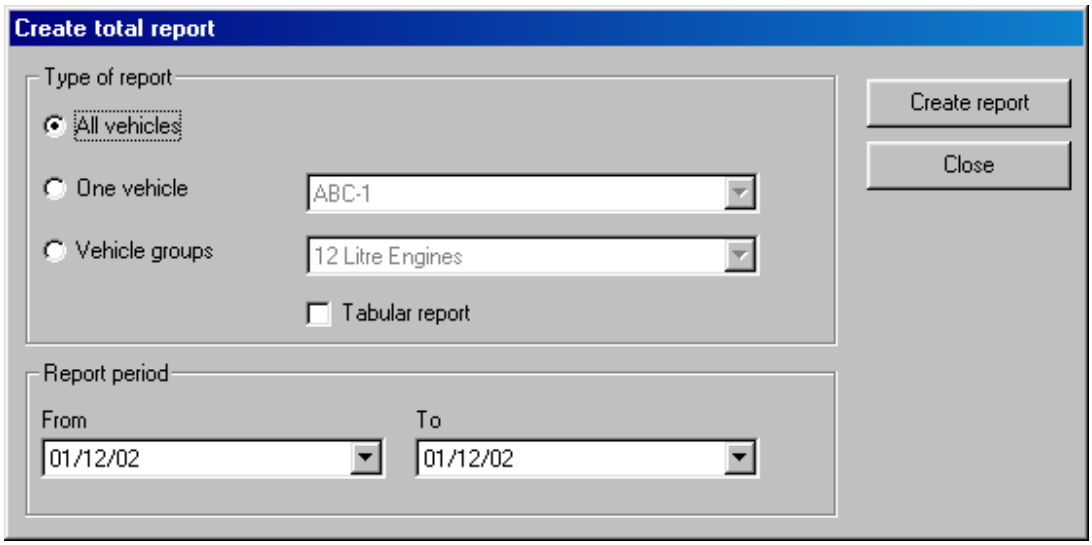
2. Each column shows data that can be sorted in either ascending or descending order by clicking on each column header.

3. Total- Totals are shown at the bottom of each column. The data totals are calculated according to the following:

   - Total MPG= total distance / total fuel
   - Distance= sum of distance for all vehicles
   - Fuel= sum of fuel for all vehicles
   - Drive MPG= drive distance / drive fuel
   - Drive Fuel= sum of drive fuel for all vehicles
   - Engine Hours= sum of total engine hours for all vehicles
   - Idle + PTO= sum of total idle + PTO hours for all vehicles
   - Idle + PTO (%)= total idle + PTO hours / total engine hours
   - Cruise %= cruise % weighted by miles
   - Top Gear %= top gear % weighted by miles
   - Over Vehicle Speed %= over vehicle speed % weighted by miles

Reports – Total Report

When this report is selected, the **Create Total Report** window will be displayed, where a number of selections can be specified:



The window contains a number of selections to be made (see the field descriptions below). Make selections according to the descriptions below and click the 'Create report' button to display the report.

Field Descriptions

All vehicles: To have the report to include all vehicles in the database, this option box should be selected.

One vehicle: To have the report for a specific vehicle, click this option box. Select the vehicle from the drop down box.

Vehicle group: To have the report for all vehicles of a specific vehicle group, click this option box. Select the vehicle group in the drop down box.

Tabular report: If this box is selected, all trips associated with the selected vehicle or group of vehicles will be displayed in a table format. If left unselected, the information will be displayed in the usual graph format.

Report period: Specify the requested time interval by selecting from the calendar. A calendar window is displayed by clicking the arrow to the right in the box. The calendar also contains side scrolling arrows, with which the months can be selected.

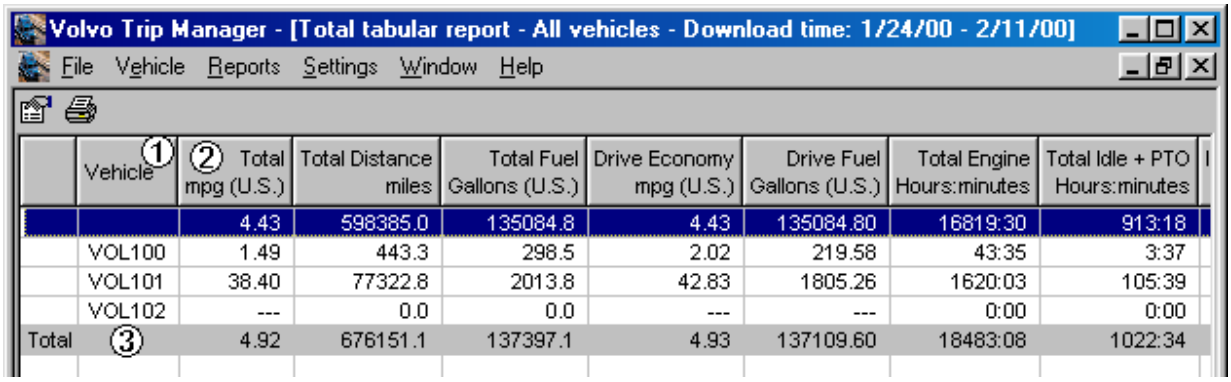
Only periods for which there is data can be selected. It is not possible to select other periods in the boxes.

Create report Creates the report on the screen.

Close Closes the window.

For details about the buttons of the report window and other options, see the 'Report Window' section under 'Trend Report'.

Total Tabular Report


Volvo Trip Manager - [Total tabular report - All vehicles - Download time: 1/24/00 - 2/11/00]
File Vehicle Reports Settings Window Help

	Vehicle ①	② Total mpg (U.S.)	Total Distance miles	Total Fuel Gallons (U.S.)	Drive Economy mpg (U.S.)	Drive Fuel Gallons (U.S.)	Total Engine Hours:minutes	Total Idle + PTO Hours:minutes
		4.43	598385.0	135084.8	4.43	135084.80	16819:30	913:18
	VOL100	1.49	443.3	298.5	2.02	219.58	43:35	3:37
	VOL101	38.40	77322.8	2013.8	42.83	1805.26	1620:03	105:39
	VOL102	---	0.0	0.0	---	---	0:00	0:00
Total	③	4.92	676151.1	137397.1	4.93	137109.60	18483:08	1022:34

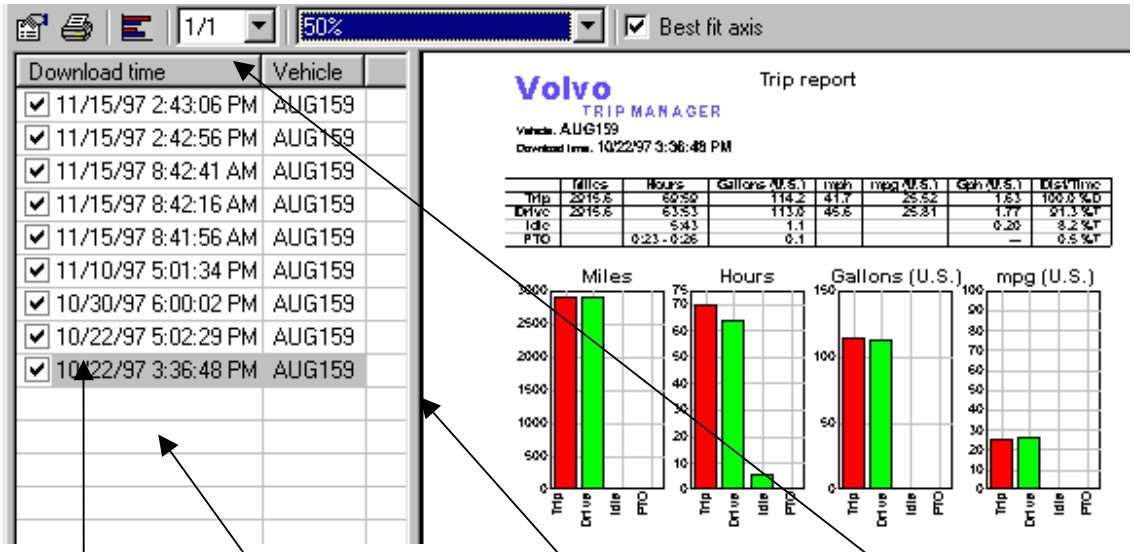
1. Vehicles will appear in the table as they were first entered into the database.

2. Each column shows data that can be sorted in either ascending or descending order by clicking on each column header.

3. Total- Totals will be shown at the bottom of each column. The data totals are calculated according to the following:

   - Total MPG= total distance / total fuel
   - Total Distance= sum of total distance for all vehicles
   - Total Fuel= sum of total fuel for all vehicles
   - Drive MPG= drive distance / drive fuel
   - Drive Fuel= sum of drive fuel for all vehicles
   - Total Engine Hours= sum of total engine hours for all vehicles
   - Total Idle + PTO= sum of total idle + PTO hours for all vehicles
   - Idle + PTO (%)= total idle + PTO hours / total engine hours

Limited report (ECU before 1999)



The trips are shown here. Click a trip (or use the Arrow up/down keys) to have corresponding data displayed in the table and graphs. The trips are sorted by vehicle and download time. You can use time as primary sort key by clicking that column heading. The checkbox indicates if data was reset after download.

You can widen the window of trips to view all columns (download time + vehicle name + vehicle group). Position the mouse pointer at the window border, hold down the left mouse button and drag to the right.

You can also change the width of each column by pointing between two column headings and dragging horizontally.

At the bottom the number of selected trips and total number of trips in the database are displayed.

When the report is shown, you can:

- View the exact value on which a bar is based by pointing with the mouse on the bar and holding it there. After a short delay, a call out will appear displaying the value.
- Create more reports from the Reports menu to make several reports simultaneously available on the screen.
- Select or deselect horizontal / vertical grids between the cells of the table by right clicking on the report and selecting the corresponding option from the displayed menu.
- Change the color of the bars by right clicking on a bar and choosing ‘Select color’ from the displayed menu.
- Change between horizontal and vertical bars with the button: Note: From the beginning, the bars are horizontal to better correspond to the figures in the table.
-

- Change the scaling of the axis with the box:

- Note: The maximum of the axis is automatically calculated for each selected trip. However, if this box is selected, the maximum will be kept when clicking another trip, making it easier to follow the size of a bar from trip to trip.
- The checkbox to the left of the download date and time indicates if the truck data was reset after the download. If checked, the data ws reset. If unchecked, the data was not reset.

See also the 'Report Window' section under 'Trend Report'.

Explanation of the Limited Report

The limited report will be used for ECUs with software older than 1999. The report shows data for the total trip, driving, idle and PTO parameters.

For the trip selected in the left part of the window, a table is shown on top, and then a number of graphs.

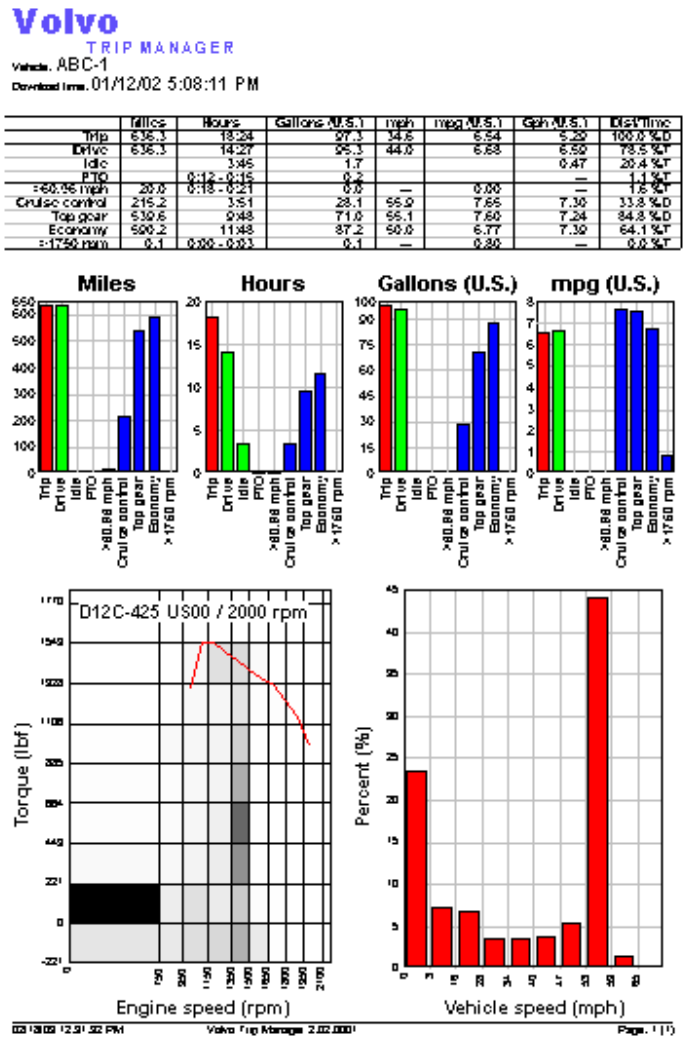
The table columns contain:

- Driving distance
- Driving time
- Fuel consumption
- Average speed
- Fuel consumption while driving
- Fuel consumption while standing still
- The percentage of the time / distance spent in each operational state. For example 7.40 % T for the state >70 mph (112 km/h) means that 7.40 % of the total time has been spent driving over 70 mph (112 km/h). 'D' means distance and 'T' means time.
- The graphs show the corresponding figures, where each bar represents a specific parameter (same as the headings in the left column of the table).
-

Time resolution

- The resolution of logged time is three minutes. If the time logged is less than one hour the time will be shown as an interval, for example 00:03-00:06.
- Values that are calculated using time will not be shown if the time value is smaller than one hour. Instead three dashes "---" are shown. Examples of this type of values are average speed (m.p.h.) and average fuel consumption - time (gallon/hour)

Full Report (ECU after 1999)



Explanation of the full report

The full report is used for ECU with software later than 1999. The report shows the same data as the limited report, plus data for the overspeed, cruise, top gear, economy and over-rev parameters.

The graph also shows a torque histogram and a speed histogram.

See also the description of the limited report.

The torque histogram shows how the engine's available torque has been used. The more a specific area has been used the darker it is shown.

The exact percentage value for an area is shown when pointing with the mouse at the bar and holding it there. After a short delay, a callout will appear.

To modify the graph, you can select a specific color, provided that the value exceeds a specific threshold value (see the menu option Settings – System settings – Torque map). The color can be selected by right clicking on the histogram and choosing 'Select threshold color' from the displayed menu.

The speed histogram shows the speed values at which the vehicle has been driven.

The exact percentage value that forms the basis for a bar, is shown when pointing with the mouse at the bar and holding it there for a short delay until a callout appears.

The color of the bars can be changed by right clicking on a bar and choosing 'Select color' from the displayed menu.

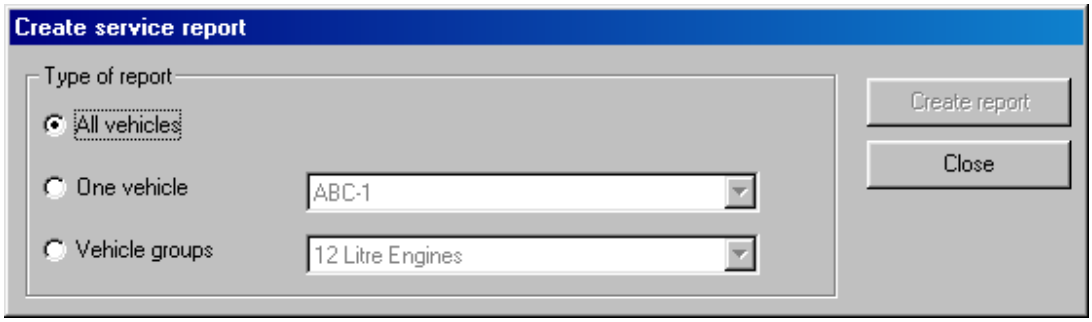
The grids of the graph can also be removed by right clicking on the graph and selecting or deselecting horizontal / vertical grids.

Report from first download

Note that the report created from the first download will not display any torque and speed histograms. These values cannot be displayed until the second and subsequent downloads.

Reports – Service Report

When this report is requested, the **Create Service Report** window will be displayed, where a number of selections can be specified:



The window contains a number of selections to be made (see the field descriptions below). Make selections according to the descriptions below and click the 'Create report' button to display the report.

Field Descriptions

All vehicles: To have the report to include all vehicles in the database, this option box should be selected.

One vehicle: To have the report for a specific vehicle, click this option box. Select the vehicle from the drop down box.

Vehicle group: To have the report for all vehicles of a specific vehicle group, click this option box. Select the vehicle group in the drop down box.

Create report Creates the report on the screen.

Close Closes the window.

Vehicle	Description	Unit	Next service	Interval	Threshold	Estimated Due
ABC124	Lamp change	Calendar time	2000-02-05	2 weeks	85 days before	2000-02-05
ABC124	Lamp change	Calendar time	2000-01-27	2 weeks	85 days before	2000-01-27
ELG842	Lamp change	Engine hours	1500 Hours	1500 Hours	85 %	
ELG842	Oil change	Distance	16000 Kilometre	16000 Kilometre	85 %	

Explanation of the Service Report

The report shows services for the selected vehicles, sorted by date with the latest first. The highlighted service is the one closest to the current date. Services above this are future, and services below are passed.

You can **sort** the report by another column by clicking at the column heading.

You will get a **warning** in the report when it is time to perform service. In the left column the following symbols may appear:

Time for service. The vehicle has reached the threshold value.

Service missed. The limit (distance, time etc.) has been exceeded.

The other **columns** show:

- Vehicle description.
- Service description.
- Unit used for the service interval (calendar time, distance, engine time, fuel consumption).
- Limit for next service.
- Service interval.
- Threshold value.
- Estimated date for next service. It is calculated on the basis of data from previous trips.

The service report can be **updated** by right clicking on a service and selecting one of the options from the displayed menu:

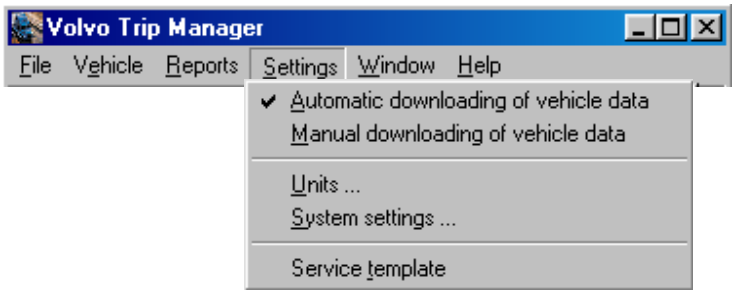
- Confirm that the service has been performed.
- Edit the information for the service.
- Delete the service from the database.

Settings – Automatic Downloading of Vehicle Data

If this menu option is active, the system will automatically retrieve vehicle information as soon as a vehicle has been connected to the PC. The system will check for a vehicle connection every tenth of a second.

Important: When Automatic Downloading of Vehicle Data is active, the counters in the engine ECU will be reset after downloading of data.

A check mark shows the active option, (Automatic/Manual) from the **Settings** menu of the menu bar.

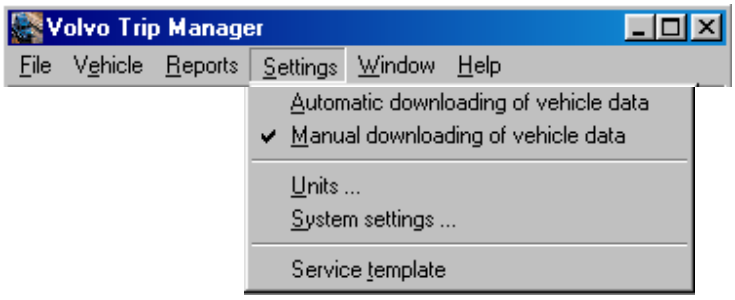


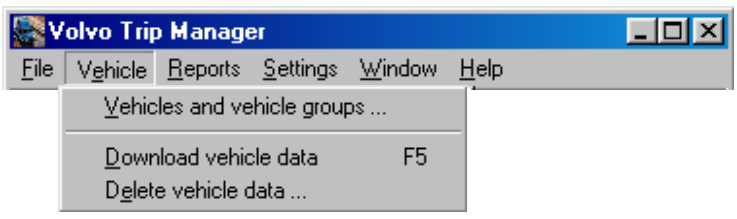
Settings – Manual Downloading of Vehicle Data

If this menu option is active, the menu option **Vehicle – Download Vehicle Data** must be used when a vehicle has been connected to the PC for downloading.

The program will ask if the counters in the vehicle's engine ECU should be reset.

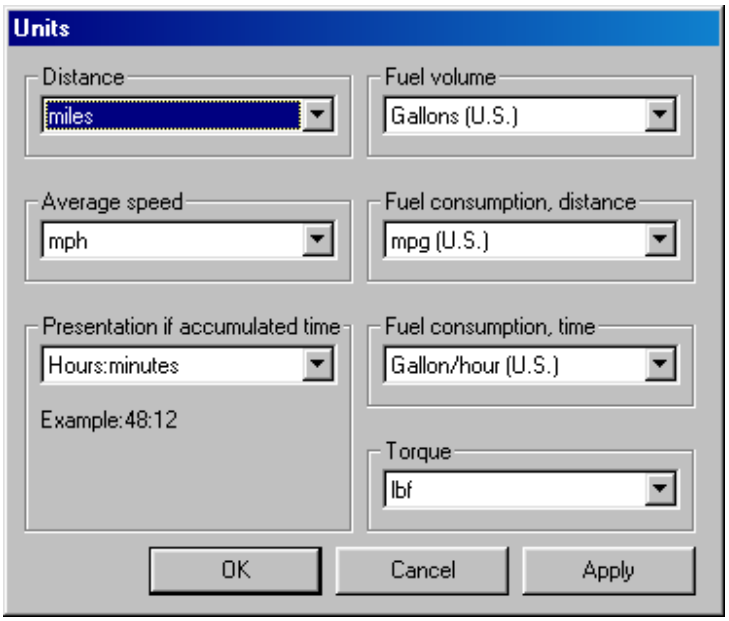
A check mark shows the active option, (Automatic/Manual) from the **Settings** menu of the menu bar.




Volvo Trip Manager
File Vehicle Reports Settings Window Help
Vehicles and vehicle groups ...
Download vehicle data F5
Delete vehicle data ...

Settings - Units

When this selection is made, the **Units** window will be displayed. In this window, measurement units are selected for use in presenting the report information. Units that can be chosen are U.S. Customary, Metric or other variations depending on measurement needs:



Select units from the drop down boxes for

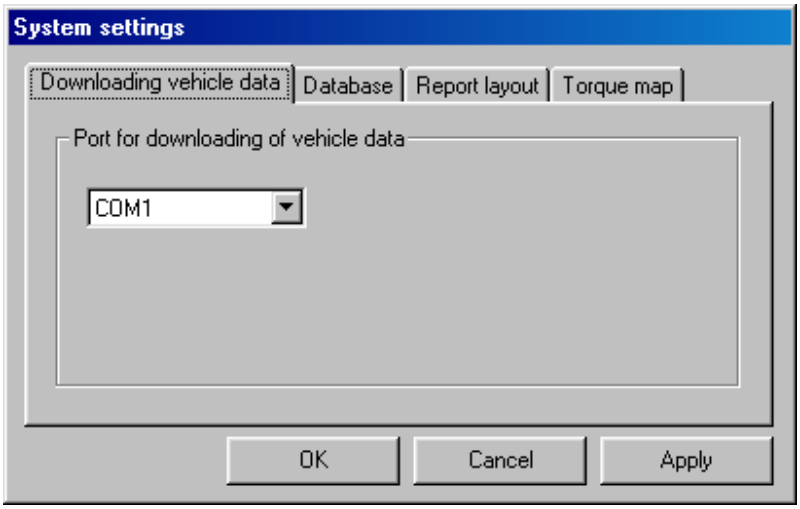
- Distance
- Fuel volume
- Average speed
- Fuel consumption, distance (volume per distance unit)
- Presentation of accumulated time
- Fuel consumption, time (volume per time unit)
- Torque

After changes are made, click the 'Apply' button to make the changes take effect. The window will not be closed. Press the 'OK' button to apply the changes and close the window. Press the 'Cancel' button to close the window without saving changes.

Settings – System Settings

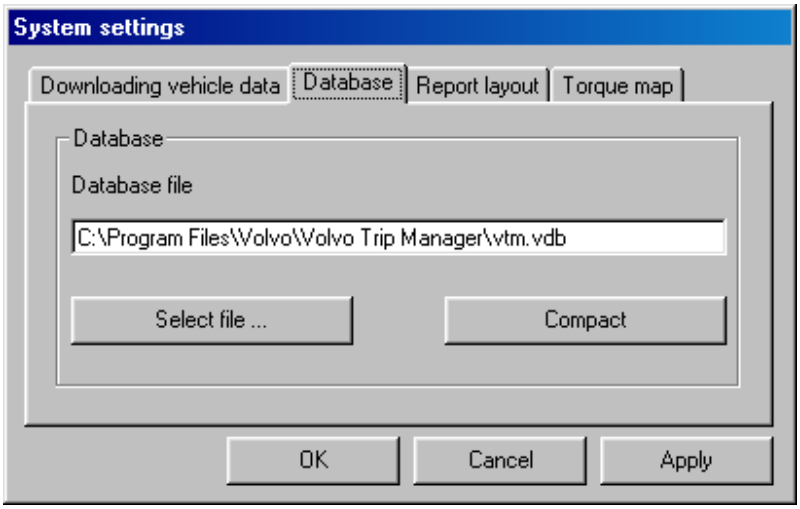
With this selection, the **System Settings** window will be displayed. Here, settings for the system are specified. There are four folders for different types of settings.

Downloading Vehicle Data Folder



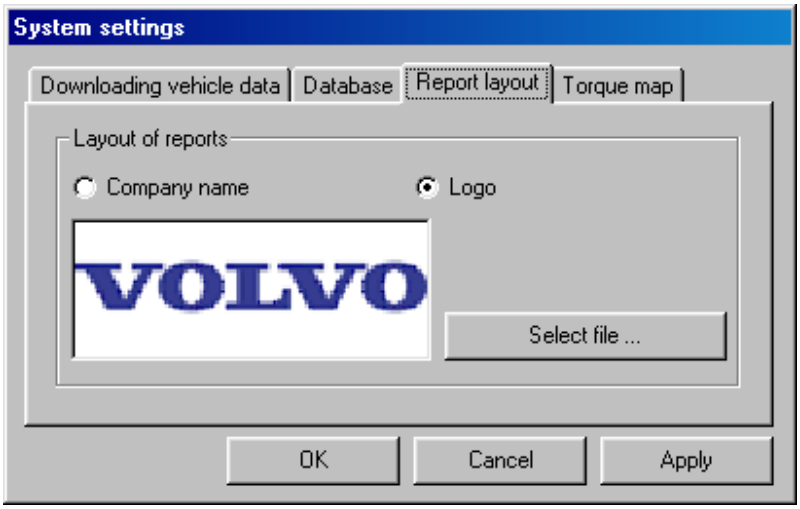
In this window, selection is made of which serial COM port the interface for downloading vehicle data has been connected. Select from the drop down box.

Database Folder



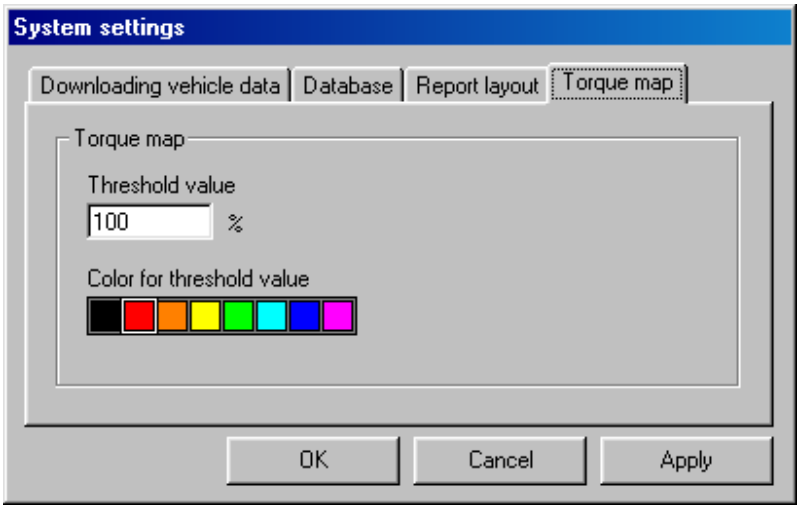
In this window, the file that contains the Volvo Trip Manager database is specified. In case of multiple databases, the file can be changed by clicking the 'Select file' button and choosing the database file from the displayed window. The window follows the Windows standard used for selecting folders and files.

Report Layout Folder



In this window, the company name to be printed on reports can be specified. The name will appear in the upper right corner of the report. The “Logo” option makes it possible to show the company logotype on the reports. The logotype must be in bitmap (.bmp) format and is selected by using the “Select file” button.

Torque Map Folder

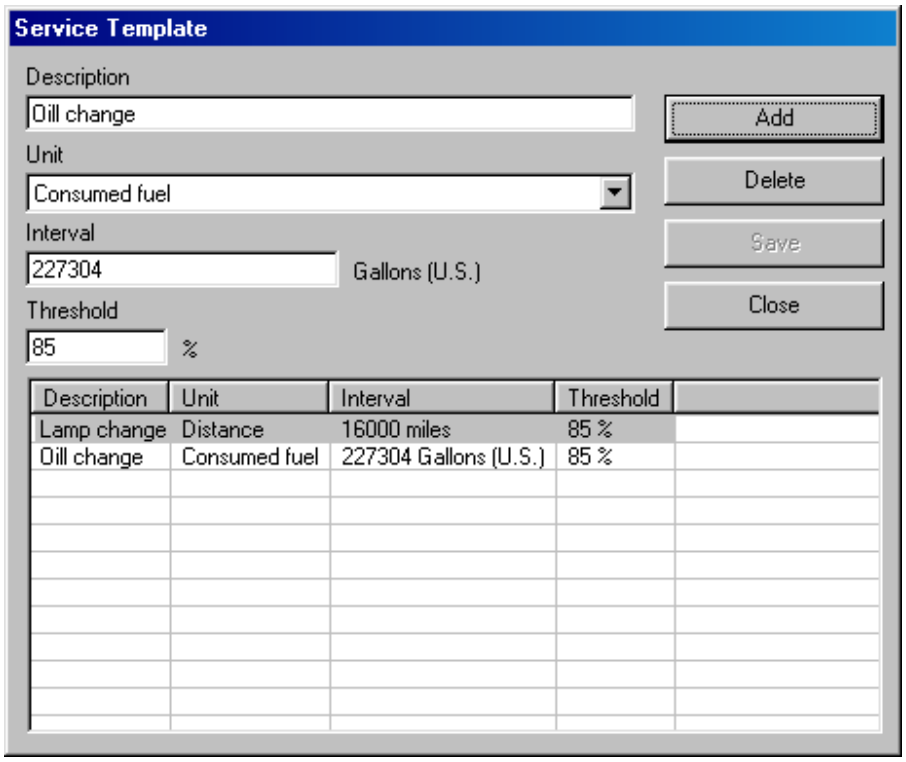


In this window, the threshold value for torque can be specified and the color of the bars for values above the threshold value can be selected.

Settings – Service Template

This window defines the services that are possible to add to a vehicle's service program. This avoids multiple entry of detailed service information for each single vehicle by adding them to the maintenance program.

The **Service Template** window will be displayed:



Refer to Vehicles and Vehicle Groups for details about how to work with this window.

Window

The Window menu contains functions for arrangement of the windows on the screen.

Cascade:	Arranges the open windows overlapping.
Tile Horizontally:	Arranges the open windows above and below each other.
Tile Vertically:	Arranges the open windows side by side.
Arrange Icons:	Arranges the icons in windows beside each other at the bottom of the main window on the task bar.

Help

The Help menu contains functions for displaying help text on the screen.

Contents:	Shows a table of contents for available documents.
Search for Help on:	Here, a search word can be entered to get a list of texts describing the searched information.
About:	Displays a window with information about the application; name, version and copyright.

Communication Errors

Communication errors can sometimes occur with software programs during normal routine connections to a vehicle. This section will attempt to explain the most common errors that may appear while using the Volvo Trip Manager software.

See the following images for further information regarding communication errors.

Volvo Trip Manager
Can't communicate with the vehicle.
Check that the vehicle is connected to the PC and the key is in the drive position.
OK

1. **Key ON/OFF Error** - This type of error can occur if the Volvo Trip Manager software program tries to connect to a vehicle while the key switch is turned OFF. Turn the key switch ON and try to connect again.

2. **COM Port Error** - This type of error can occur if the wrong COM port setting has been selected in the Volvo Trip Manager software program. Open the Volvo Trip Manager application, go to **Settings – System Settings – Downloading vehicle data** and choose the correct serial COM port. A restart of the computer may be necessary.

3. **Interface Communication Error** - This type of error occurs if the communication interface is disconnected from the PC or the vehicle. In a rare instance it may also be due to a defective interface. Please ensure that the interface is connected and functioning properly. It is also a good idea to try another interface that is known to be good, if available, before assuming any hardware problems.

Volvo Parts Corporation